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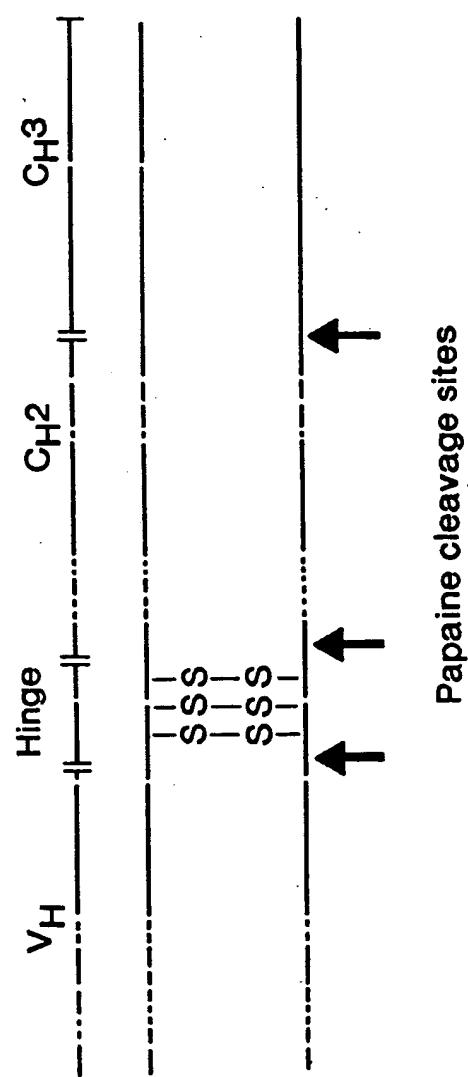
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Replacement Sheet



Papain cleavage sites

FIG. 5

Replacement Sheet

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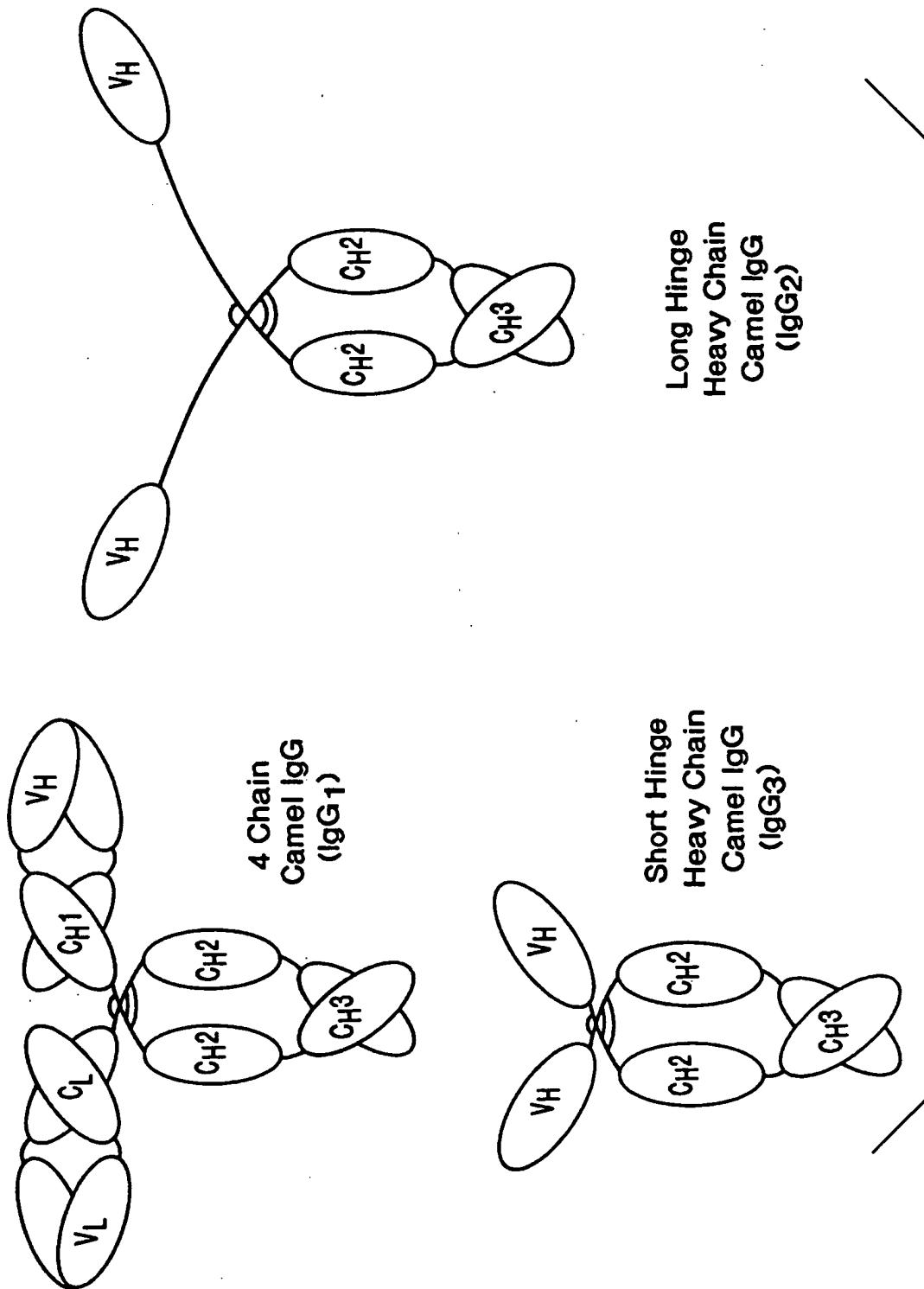


FIG. 6

Replacement Sheet



SEQ ID NO: 92	DR01006	C-----TCGAG---TCTGGGGGAGG
SEQ ID NO: 93	DR27006	C-----TCGAG---TCTGGGGGAGG
SEQ ID NO: 94	DR03006	C-----AGGTGA-----AACTGCTCGAG---TCTGGAGGAGG
SEQ ID NO: 95	DR11006	C-----TCGAG---TCTGGGGGAGG
SEQ ID NO: 96	DR24006	C-----AGGTGA-----AACTGCTCGAG---TCTGGGGGAGG
SEQ ID NO: 97	DR16006	C-----TCGAG---TCTGGAGGAGG
SEQ ID NO: 98	DR19006	C-----TCGAG---TCTGGAGGAGG
SEQ ID NO: 99	DR07006	C-----TCGAG---TCTGGGGGAGG
SEQ ID NO: 100	DR16006	C-----TCGAG---TCTGGGGGAGG
SEQ ID NO: 101	DR20006	C-----TCGAG---TCAGGGGGAGG
SEQ ID NO: 102	DR25006	C-----TCGAG---TCTGGGGGAGG
SEQ ID NO: 103	DR20006	C-----TCGAG---TCTGGAGGAGG
SEQ ID NO: 104	DR21006	C-----TCGAG---TCTGGGGGAGG
SEQ ID NO: 105	DR09006	C-----AGGTGA-----AACTGCTCGAG---TCTGGGGGAGG
SEQ ID NO: 106	DR17006	C-----TCGAG---TCTGGGGGAGG
SEQ ID NO: 107	DR13006	C-----TCGAG---TCAGGGGGAGG
SEQ ID NO: 108	DR02006	CTCGAGTCAGGTGTCCGGTCTGATGTGCAGCTGGTGGCGTCTGGGGGAGG
DR01006		ATCGGTGCAGGCTGGAGGGTCTTGAGACTCTC--GTGCG-CAGCCTCTG
DR27006		CTCGGTGCAGGCTGGAGGGTCTCTGAGACTCTCTGTGCATCTTCTTCTA
DR03006		CTCGGTGCAGACTGGAGGGATCTCTGAGACTCTCTGTGCAGT--C-TCTG
DR11006		GTCGGTGCAGGCTGGAGGGTCTCTGAGACTCTCTGTAAATGT--C-TCTG
DR24006		GTCGGTGCAGGCTGGAGGGTCTCTGAGACTCTCTGTAAATGT--C-TCTG
DR16006		CTCGGCGCAGGCTGGAGGGATCTCTGAGACTCTCTGTGCAGC--CCACGG
DR19006		CTCGGTTCAAGGCTGGAGGGTCCCTAGACTCTCTGTGCAGC--C-TCTG
DR07006		CTCGGTGCAGGGTGGAGGGTCTCTGAGACTCTCTGTGCAA--TCTCTG
DR16006		CTCGGTGCAGGCTGGAGGGTCTCTGAGACTCTCTGTACAG--GCTCTG
DR20006		CTCGGTACAGGTTGGAGGGTCTCTGAGACTCTCTGTGTAG--CCTCTA
DR25006		CTCGGTACAAACTGGAGGGTCTCTGAGACTCTCTTGC--AAATCTCTG
DR20006		CTCGGTGCAGGCTGGAGGGTCTCTGAGACTCTCTGTG--TAGCCTCTG
DR21006		CTCGGTGCAGGTTGGAGGGTCTCTGAAACTCTCTGTAAAAT--CTCTG
DR09006		CTCGGTGCAGGCTGGGGGGTCTCTGACACTCTCTGTG--TATACAC--
DR17006		CTCGGTCCAACCTGGAGGGATCTCTGACACTCTCTGTACAGTT--TCTG
DR13006		CTCGGTGGAGGCTGGAGGGTCTCTGAGACTCTCTGTACAG--CCTCTG
DR02006		CTCGGTGCAGGCTGGAGGCTCTGAGACTCTCTGTACAG--CCTCTG
DR01006		GA--TACAGTAATT---GTCCCCCTCACTTG-GAGCTGGTATGCCAGTT
DR27006		AA--TATATGCCCTT---GCACCTACGACAT-GACCTGGTACCGCCAGGCT
DR03006		GA--TTCTCCTTTA---GTACCAAGTTGTAT-GGCCTGGTTCCGCCAGGCT
DR11006		GC--TCTCCCAGTA---GTACTTATTGCCT-GGGCTGGTTCCGCCAGGCT
DR24006		GC--TCTCCCAGTA---GTACTTATTGCCT-GGGCTGGTTCCGCCAGGCT
DR16006		GA--TTCCGC-TCA---ATGGTTACTACAT-CGCCTGGTTCCGTCAAGGCT
DR19006		AC--TACACCATCA---CTGATTATTGCAT-GGCCTGGTTCCGCCAGGCT
DR07006		GA--TACACGTACG---GTAGCTTCTGTAT-GGGCTGGTTCCCGAGGGT
DR16006		GA--TTCCCCTATA---GTACCTTCTGTCT-GGGGTTGGTTCCGCCAGGCT
DR20006		CT--CACACCGACA---GTAGCACCTGTAT-AGGCTGGTTCCGCCAGGCT
DR25006		GA--TTGACTTTG---ATGATTCTGACGT-GGGGTTGGTACCGCCAGGCT
DR20006		GA--TTCAATTTCG---AAACTTCTCGTAT-GGCCTGGTACCGCCAGACT
DR21006		GAGGTACCCAGATCGTGTCTAAATCTTGGCCTGGTTCCGCCAGGCT
DR09006		-----CAACGATACTGGGACCA-----TGGGATGGTTCCGCCAGGCT
DR17006		-----GGGCCACCTACA---GTGACTACAGTATTGGA-TGGATCCGCCAGGCT
DR13006		G-----ATACGTAT-CCT---CTATGGCCTGGTTCCGCCAGGTT
DR02006		GAGA---CAGTTCACTAGATT--TGCCATGTCTGGTTCCGCCAGGCT

Replacement Sheet

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DR01006	CCAGGAACGGAGCGAGTCGTCTCCAGTATGGATCCGGATGGAATAC
DR27006	CCAGGCAGGAGCGCGAATTGTCTCAAGTATAAATTGATGGTAAGAC
DR03006	TCAGGAAAGCAGCGTGGGGGTGCGAGCCATTAAATAGTGGCGGTGGTAG
DR11006	CCAGGGAGGGAGCGTGAGGGGGTACAGCGATTAA-----CACTGATGG
DR24006	CCAGGGAGGGAGCGTGAGGGGGTACAGCGATTAA-----CACTGATGG
DR16006	CCTGGGAAGGGCGTGAGGGGGTGCACAGCGATTAA-----CACTGATGG
DR19006	CCAGGGAGGGAGCGTGAAATTGGTCGCAGCGATTCAAGTTGTCCGTAGTGA
DR07006	CCAGGCAGGAACGTGAGGGGATCGCAACTATTCTAATGGTGGTACTAA
DR16006	CCAGGGAGGGAGCGTGAGGGGGTGCAGGTTAAATAGTGCAGGAGGTAAC
DR20006	CCAGGGAGGGAGCGCGAGGGGGTGCACAGTATAATTGGTGTGGTGG
DR25006	CCAGGGCATGAGTGCACATTGGTCTCAGGTATTCTGAGTGTGGTACT-C
DR20006	CCAGGAAATGTGTGTGAGTTGGTCTCAAGTATTACAGTGTGG-----
DR21006	CCAGAGAAGGAGCGCGAGGGGATCGCAGTTCTCGACTAAGGATGGTAA
DR09006	CCAGGGAAAGAGTGCAGAAGGGTGCACATATTACGCCGTGGTATGA-
DR17006	CCAGGGAGGACCGTGAAAGTAGTCGAGCCGCTAATACTGGT-----
DR13006	CCAGGGCAGGAGCGCGAGGGGTGCGTTGTTCAAACGG-----
DR02006	CCAGGGAGGAGTGCACATTGGTCTCAAGCATTAAAGTAATGGAAGGAC
DR01006	CAAGTACA-----CATACTCCGTGAAGGGCCGCTTCACC
DR27006	AACATACG-----CAGACTCCGTGAAGGGCCGATTCAAC
DR03006	GACATACTA-CAACACATATGTCGCCGAGTCCGTGAAGGGCCGATTGCC
DR11006	CAGTATCAT-ATACGCA-----GCCGACTCCGTGAAGGGCCGATTCAAC
DR24006	CAGTGTCA-ATACGCA-----GCCGACTCCGTGAAGGGCCGATTCAAC
DR16006	-----CGA-CGTACACATACTACGCCGACTCCGTGACGGGCCGATTCAAC
DR19006	TACT--CGC-C-TCACAGACTACGCCGACTCCGTGAAGGGACGATTCAAC
DR07006	-----CACATACTATGCCGACTCGGTGAAGGGCCGATTCAAC
DR16006	-----TACTTACTATGCCGACGCCGTGAAGGGCCGATTCAAC
DR20006	-----TACGAATTATCGCAGTCCGTGAAGGGCCGATTCAAC
DR25006	CATATACAAAGAGTGGAGACTATGCTGAGTCTGTGAGGGGCCGGTTACC
DR20006	CA-AAAACATACGTCGACC--GCA-----TGAAGGGCCGATTCAAC
DR21006	GA-----CATTCTATGCCGACTCCGTGAAGGGCCGATTCAAC
DR09006	-----CCTTCATTGATGAACCCGTGAAGGGGCCGATTCAAC
DR17006	-----CGACTAGTAAATTCTACGTCGACTTGTGAAGGGCCGATTCAAC
DR13006	--CTGACAAT-AGTCGATTATATGGCAGTCCGTGAAGGGCCGATTCAAC
DR02006	AACTGA-----GGCCGATTCCGTGCAAGGCCGATTCAAC
DR01006	ATGTCGGAGGCAGCACCGAGTACACAGTATTCTGCAAATGGACAATCT
DR27006	ATCTCCCAGACAGCGCCAGAACACGGGTATCTGCAGATGAACAGCCT
DR03006	ATCTCCCAGACACGCCAGAACACGGGTATCTGCAGATGAACAGCCT
DR11006	ATCTCCCAGACACGCCAGAACACGGGTACATCTCCAGATGAACAGCCT
DR24006	ATCTCCCAGACACGCCAGAACACGGGTATCTGCAGATGAACAGCCT
DR16006	ATCTCCCAGACACGCCAGAACACGGGTATCTGCAGATGAACAGCCT
DR19006	ATCTCCCAGACACGCCAGAACACGGGTATCTGCAGATGAACAGCCT
DR07006	ATCTCCCAGACACGCCAGAACACGGGTATCTGCAGATGAACAGCCT
DR16006	ATCTCCCAGGGAAATGCCAGAACACGGGTATCTGCAGATGAACAGCCT
DR20006	ATCTCCCAGACACGCCAGAACACGGGTATCTGCAGATGAACAGCCT
DR25006	ATCTCCCAGACACGCCAGAACACGGGTATCTGCAGATGAACAGCCT
DR20006	ATCTCCCAGACACGCCAGAACACGGGTATCTGCAGATGAACAGCCT
DR21006	ATCTCCCAGACACGCCAGAACACGGGTATCTGCAGATGAACAGCCT
DR09006	ATCTCCCAGACACGCCAGAACACGGGTATCTGCAGATGAACAGCCT
DR17006	ATCTCCCAGACACGCCAGAACACGGGTATCTGCAGATGAACAGCCT
DR13006	ATCTCCCAGACACGCCAGAACACGGGTATCTGCAGATGAACAGCCT
DR02006	ATCTCCCAGACACGCCAGAACACGGGTATCTGCAGATGAACAGCCT



Replacement Sheet

DR01006	GAAACCTGAGGACACGGCGATGTATTACTGTAAAAC-A---GCCCTAC--
DR27006	GAAACCTGAGGACACGGCGATGTATTACTGTAAAAT-A---GA---TTC--
DR03006	AAACCCCTGAAGACACGGCTACGTATTACTGTGCGGCGG---TCCCAGCCC
DR11006	GCAACCTGAGGATACGGCCACCTATTACTGCGCGGCAA---GACTGACGG
DR24006	GCAACCTGAGGATACGGCCACCTATTACTGCGCGGCAA---GACTGACGG
DR16006	GAAACCTGAGGACACGGCCATCTACTTCTGTGCAGCAG---G---CTC
DR19006	GACACCTGAGGACACGGCCATCTACAGTTGTGCGGCAA---C---CAG
DR07006	GAAACCTGAAGACACGGGCACCTATTACTGTGCTG-CA---GAACTAAGT
DR16006	GAAACCTGAGGACACGGCCATCTATTACTGCGCGG-CG---GATAGTCCA
DR20006	GAAACCTGAGGACAGCGCCATGTACTACTGTGCAATCA---CTGAAATTG
DR25006	GAAACCTGAGGACACGGCCATGTATTACTGCGCGGTAGATGGTTGGACCC
DR20006	CAAACCTGAGGACACGGCCATGTATTACTGTGCG-----CC
DR21006	GAACCCGGAGGACACTGCCGACTACTACTGCGCTGCAAATCAATTAGC--
DR09006	GAGGCCTGAGGACACGGCCGTATTACTGTGCGGGCAGATTG-----
DR17006	GAAACCTGAGGACACGGCCATCTATTACTGTGCGGGCAG-----CGGACCC
DR13006	GCAACCTGACGACACTGGCGTGTACTACTGTGCGGGCC-----CAA
DR02006	GAAACCGAGGACACGGCCGTATTACTGTGGGGCAGT-----
DR01006	-----A-AC---CTGGGGGTTATTGTGGGT-----
DR27006	-----GTAC---CCGTGCCATCTCCTTGATG-----
DR03006	-----GGCG-CCATT-----CTTGATTG
DR11006	-----AGATGGGGCTTGTGATGCGAGATGGCGACCTAGC---GACAAGGAC-G
DR24006	-----AGATGGGGCTTGTGATGCGAGATGGCGACCTAGC---GACAAGGAC-G
DR16006	-----GCGTTTT-CTAGTCTGTTGGGAGCACTTC-TAGAC---TCGAAAGTAG
DR19006	-----TAGTTTTACTGGTACT-----GCAC-----C---ACG-----G
DR07006	-----GGTGGTAGTTGTGAATTGC---CTTTGC-----TATTGACTA-----
DR16006	-----TGTTACATGCCGACTATGC---CCGCTCCCCGATAACGAGACAGTTTGG
DR20006	-----AGTGGTATGGGTGCAATT---AAGGACTACTTTACT---C-----G
DR25006	-----GGAAGGAAG---GGGAATCGGGTAC---CCTGGTCGGTCCAATGTGAA
DR20006	-----GGTTGAA-----TATC---CTATTGCAAGAC---ATGTGTT
DR21006	-----TGGTGGCTGGTATT-----TGGACCCGAATTACTGG-CTCTCTGTG
DR09006	-----GAAATACTGGA---CTTGTGGTGC---CCAGA-CTGG-----AG
DR17006	-----AAGTATATATTATAGTATC-----CTCCNNAT-----
DR13006	-----AAGAAGGATCGTA---CTAGATGGGC-----CGAGCCT-----
DR02006	-----CTCCCTAA---TGGACCGAATTTC-----
DR01006	--TGGGTANTGCCTCTGGGGCCAGGGGACCCAGGTACCGTCTCCTCACT
DR27006	--T-----CTGGGGCCAGGGGACCCAGGTACCGTCTCCTCACT
DR03006	AAAAAGTATAAGTACTGGGGCCAGGGGACCCAGGTACCGTCTCCTCACT
DR11006	TTTGCATATAACTACTGGGGCCGGGGGACCCAGGTACCGTCTCCTCACT
DR24006	TTTGCATATAACTACTGGGGCCGGGGGACCCAGGTACCGTCTCCTCACT
DR16006	CGA-CT-ATAACTATTGGGGCAGGGGATCCAGGTACCGTACCTCACT
DR19006	CGC-CTTATAACGTCTGGGTCAAGGGGACCCAGGTACCGTCTCCTCACT
DR07006	CTGGG-----GCCAGGGCACCCAGGTACCGTCTCCTCACT
DR16006	CTGGGATGATT-----GCCAGGGGACCCAGGTACCGTCTCCTCACT
DR20006	CTGGG-----GCCAGGGGACCCAGGTACCGTCTCCTCACT
DR25006	GATGGTTATAACTATTGGGGCAGGGGACCCAGGTACCGTCTCCTCAC-
DR20006	CGAGAT---ACG---GCGACCCGGGGACCCAGGTACCGTCTCCTCAC-
DR21006	GGTGCATATGCCATCTGGGGCAGGGGACCCAGGTACCGTCTCCTCAC-
DR09006	GATACTCGGACAG-TGGGGTCAGGGGCCAGGTACCGTCTCCTCACT
DR17006	--TGAGTATAAGTACTGGGGCAGGGGACCCAGGTACCGTCTCCTCA--
DR13006	CGAGAATGGAACAACTGGGGCAGGGGACCCAGGTACCGTCTCCTCA--
DR02006	CCAACATGGG--TGCCGGGCCAGGGAACCCAGGTACCGTCTCCT-----



Replacement Sheet

DR01006	AG----TTACCCGTACGACGTTCCGGACTACGGTTCTTAATAGAATT
DR27006	AG----TTACCCGTACGAGCTTCCGGACTACGGTTCTTAATAGAATT
DR03006	AGCTAGTTACCCGTACGACGTTCCGGACTACGGTTCTTAATAGAATT
DR11006	AG----TTACCCGTACGACGTTCCGGACTACGGTTCTTAATAGAATT
DR24006	AGCTAGTTACCCGTACGACGTTCCGGACTACGGTTCTTAATAGAATT
DR16006	----AGTTACCCGTACGACGTTCCGGACTACGGTTCTTAATAGAATT
DR19006	----AGTTACCCGTACGACGTTCCGGACTACGGTTCTTAATAGAATT
DR07006	----AGTTACCCGTACGACGTTCCGGACTACGGTTCTTAATAGAATT
DR16006	----AGTTACCCGTACGACGTTCCGGACTACGGTTCTTAATAGAATT
DR20006	----AGTTACCCGTACGACGTTCCGGACTACGGTTCTTAATAGAATT
DR25006	----TAGTTACCCGTACGACGTTCCGGACTACGGTTCTTAATAGAATT
DR20006	----TAGTTACCCGTACGACGAACCGGACTACGGTTCTTAATAGAATT
DR21006	----TAGTTACCCGTACGACGTTCCGGACTACGGTTCTTAATAGAATT
DR09006	AGCTAGTTACCCGTACGACGTTCCGGACTACGGTTCTTAATAGAATT
DR17006	-----
DR13006	-----
DR02006	-----

-----TA

FIG. 7D



062804
13281 U.S. PTO

Replacement Sheet

FIG. 1B

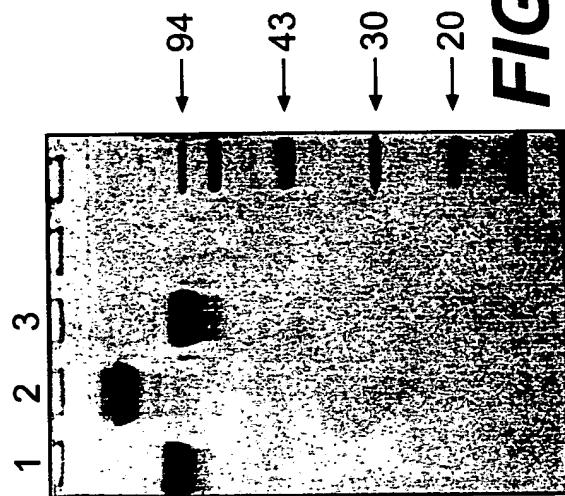


FIG. 1C

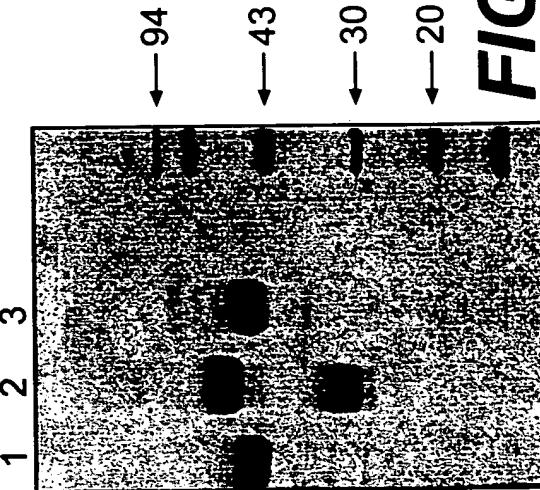
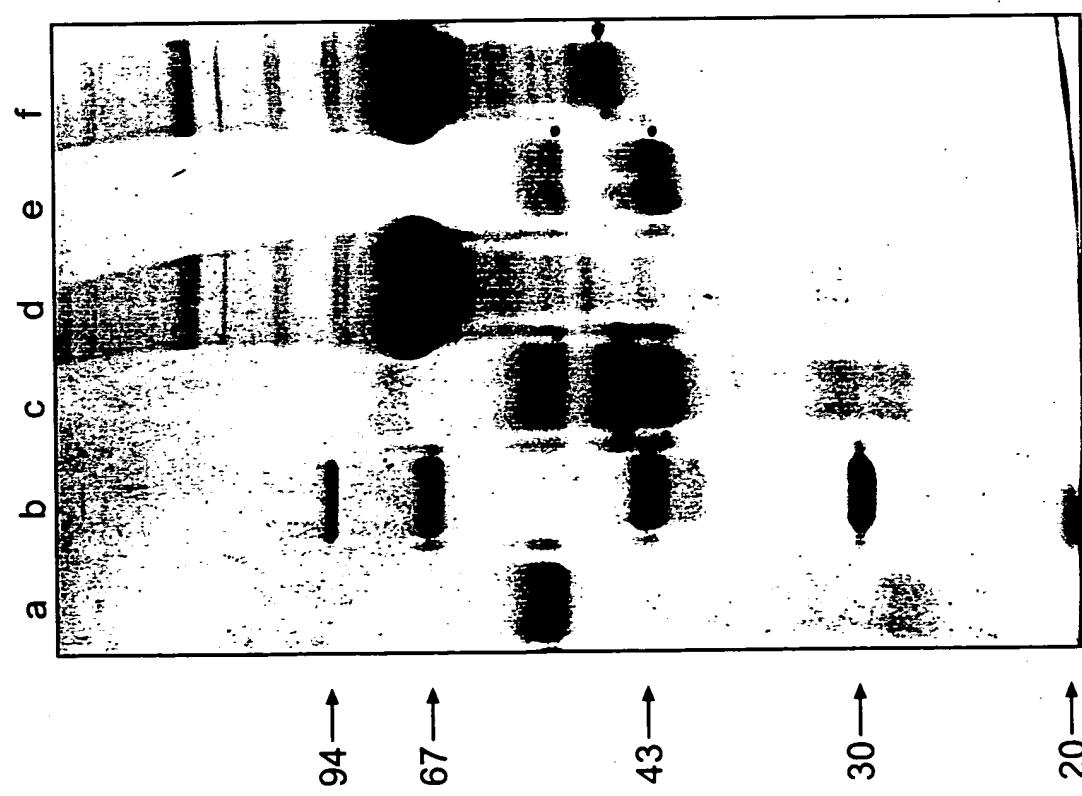
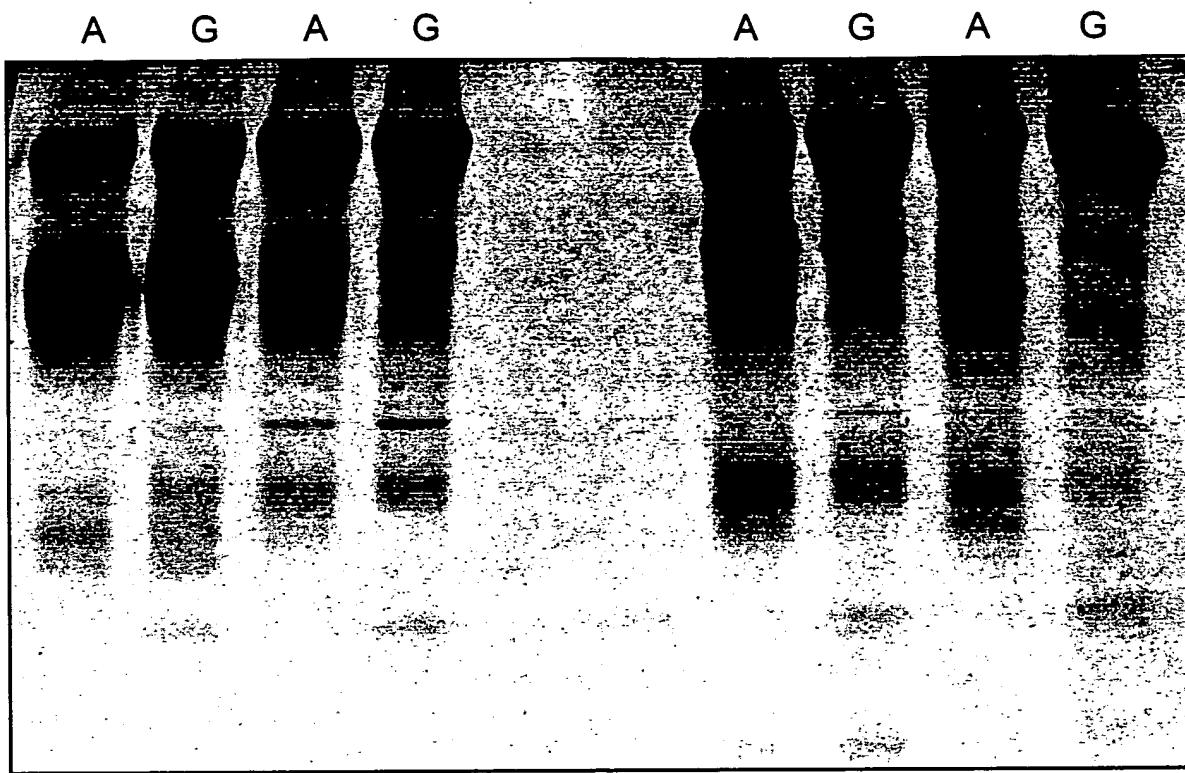


FIG. 1A



13281
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U.S. PTO

Replacement Sheet



C. bactrianus

L. vicugna

L. glama

L. pacos

FIG. 2A

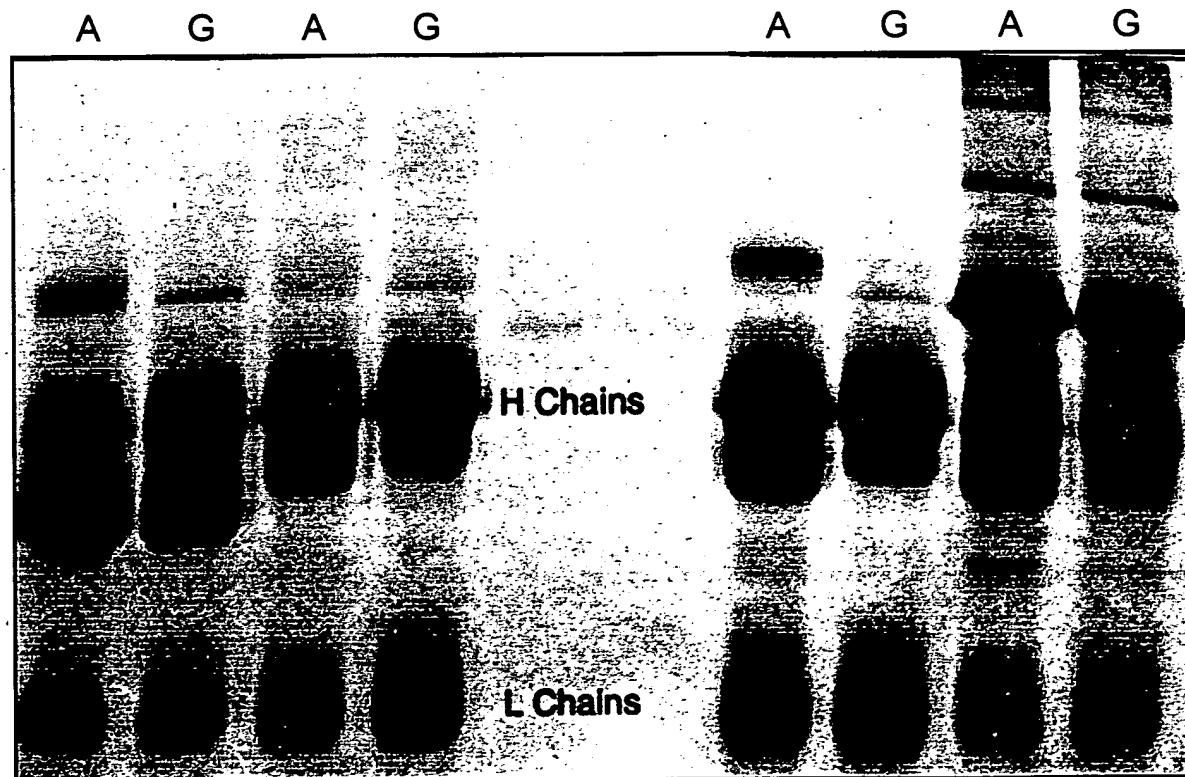
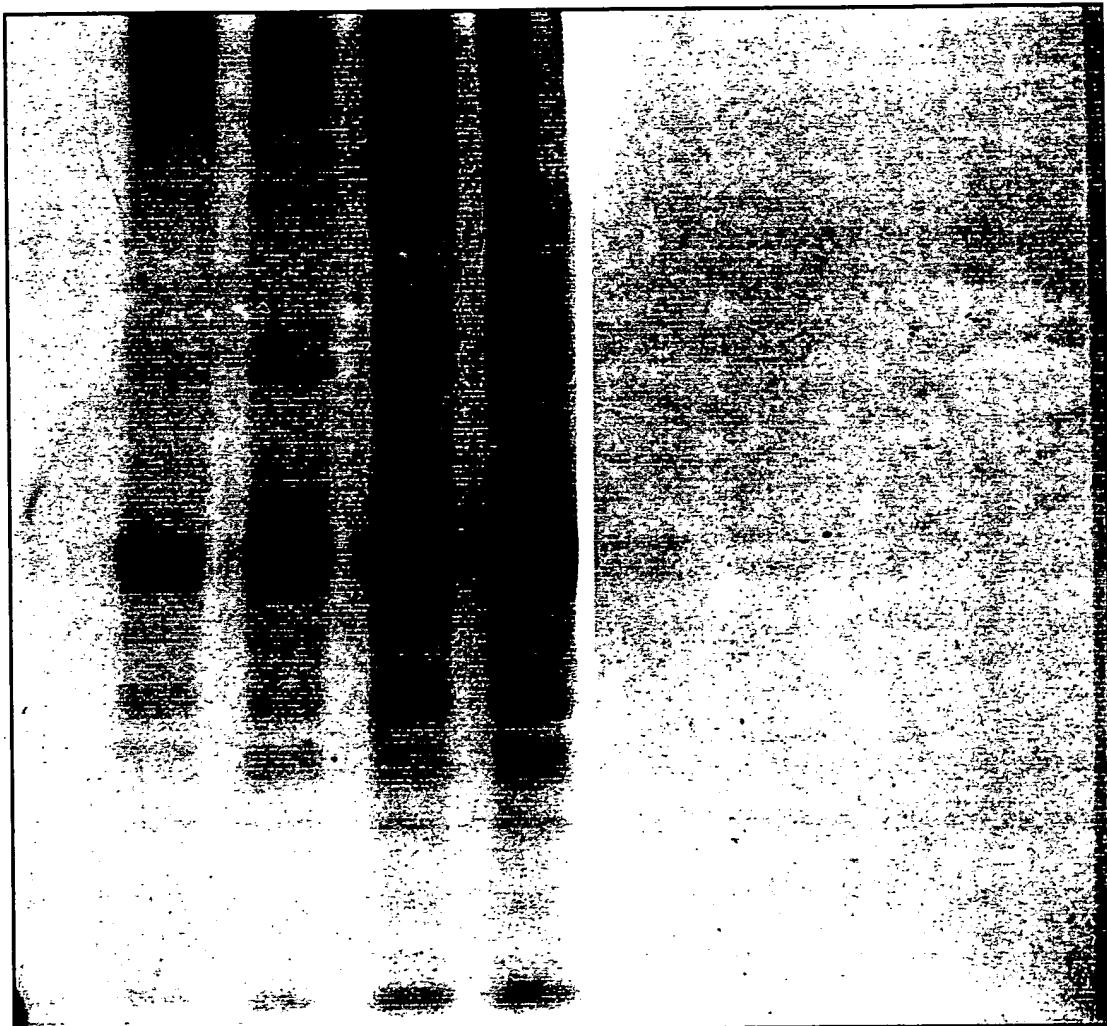


FIG. 2B



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Prot. A	Ig1	Ig2	Ig3	Tot.Ser	Ig1	Ig2	Ig3	Tot.Ser
Control								
Counts/5ul	65	1258	1214	2700	2978	147	157	160

FIG. 3A

13281 U.S. PTO

062804

Replacement Sheet

Western blot analysis of IgG1, IgG2, and IgG3 antibodies in healthy and *T. evansi* infected samples. The blot shows bands for IgG1 (~94 kDa), IgG2 (~67 kDa), and IgG3 (~43 kDa). Arrows indicate the protein size markers.

Sample	IgG1	IgG2	IgG3
Healthy	Weak band	Strong band	Strong band
<i>T. evansi</i> infected	Strong band	Strong band	Strong band

FIG. 3B

FIG. 3C



13281 U.S. PTO

Replacement Sheet

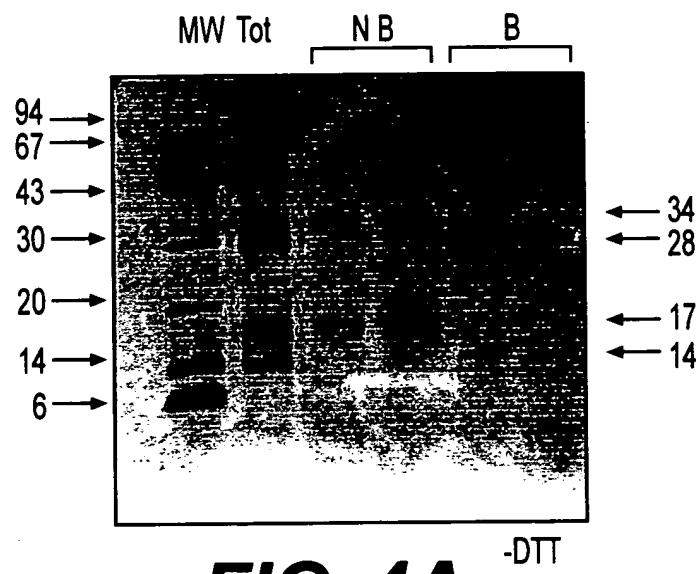


FIG. 4A

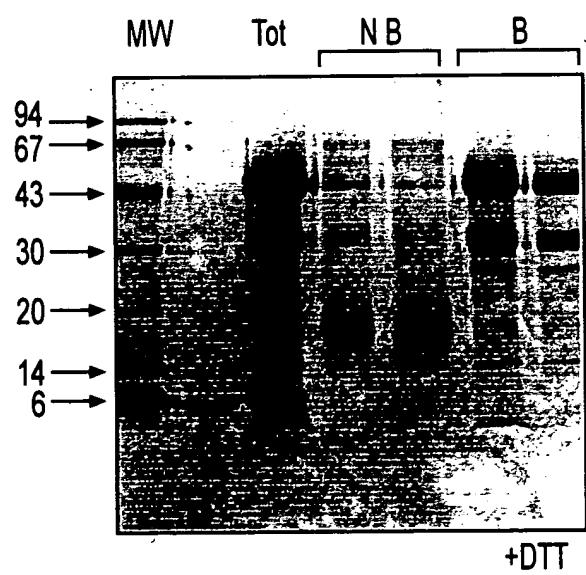


FIG. 4B

Replacement Sheet



13281 US PTO
062804

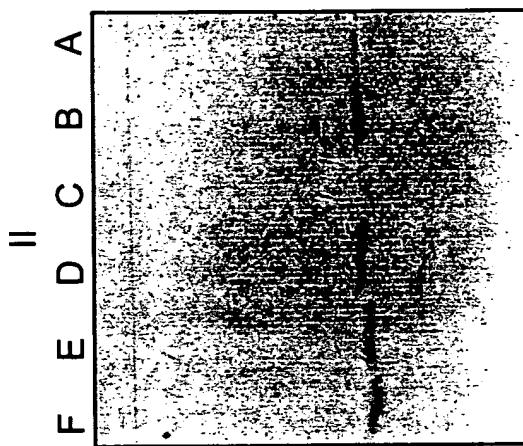


FIG. 8B

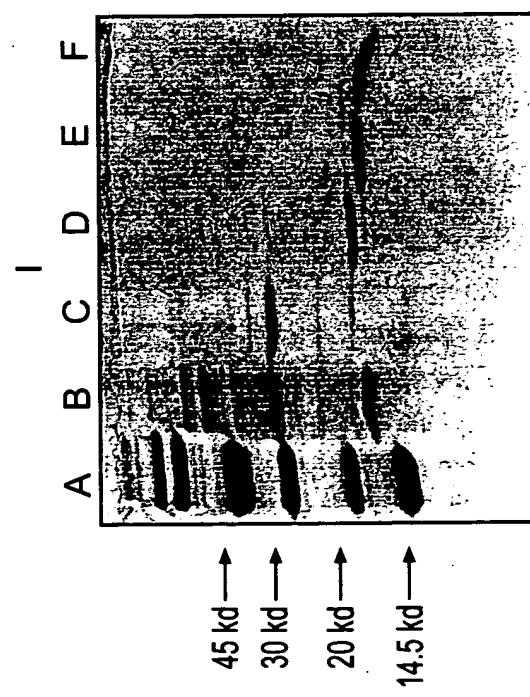


FIG. 8A